

## 10 FACTORS THAT AFFECT BLOOD PRESSURE READINGS

The #1 Biggest Mistake That Affects Blood Pressure Readings is wrong blood pressure cuff size, as this is one of the most frequent errors made when measuring blood pressure. Be conscious of the following factors the next time you get a blood pressure reading. They can affect it by 5 to 50 points, and artificially high or low readings could affect your medical treatment.

NOTE: Your arm should be supported and horizontal at the level of the midpoint of your sternum and completely relaxed with legs uncrossed, feet flat on the floor. Make sure bladder is empty and you are wearing warm clothing and not hydrated at all. No chewing gum during blood pressure readings and avoid food before the readings.

### 1. ARM POSITION

Correct blood pressure arm position

Your palm should be facing up and your arm should be supported and horizontal at the level of the midpoint of your sternum (chest bone) which is at the approximate level of the right atrium of your heart. It may be necessary to place a pillow under your arm or adjust the chair or table to achieve the correct position.

>If your upper arm is BELOW the level of the right atrium, your blood pressure readings will be too high (blood is flowing down into the arm).

>If the upper arm is ABOVE heart level, the readings will be too low (blood is flowing down from the arm).

Researchers studied a group of outpatients to determine the effects of arm position on blood pressure measurements. Blood pressures were taken and compared in the following arm positions:

>Sitting with arms hanging down and elbows resting on the armrests of a chair (i.e., the elbow is at a right angle)

>Sitting with arms supported at the level of the mid-sternum

>Blood pressure should be read with arm supported at the level of the mid-sternum

The results showed that blood pressure readings were significantly higher when sitting with arms on the armrest of the chair. Readings can be over 10 mm Hg higher in both systolic (upper number) and diastolic (lower number) pressures.

Blood pressure readings are elevated significantly when the arm is hanging down.

In another study of 100 random emergency room patients, blood pressures were compared in two positions:

1) Arm lax and hanging down parallel to the body and 2) Arm in the "correct"

position. Among the seated patients, 22% of them were diagnosed with hypertension, but twice as many patients were diagnosed with high blood pressure with the arm hanging down. Be sure to note the position of your arm whenever a clinician takes your blood pressure.

## 2. REST PERIOD

Rest quietly and comfortably for 3-5 minutes prior to taking your blood pressure. Activities, such as exercise or eating, will affect your reading.

## 3. POSTURE

Sit comfortably with your legs uncrossed, feet flat on the floor, with your back and arm supported to avoid a higher reading. How many times have you had your blood pressure taken while sitting on the exam table at the doctor's office with your back and arms unsupported, legs dangling down, and arms hanging down by your side?

NOTE: If you're older, have symptoms or are on a drug regimen that cause you to get dizzy or lightheaded, have your blood pressure checked routinely in both the seated and standing positions to check for postural hypotension.

## 4. MUSCLE TENSION

Stress and anxiety can cause muscle tension which can increase your blood pressure. Meditate for 10 minutes and practice slow, deep breathing to relax.

## 5. TALKING

Talking to the clinician or people around you while taking your blood pressure will increase your readings.

## 6. FULL BLADDER

When your bladder is empty, your blood pressure will be lower. As it starts to fill up, your numbers will rise.

## 7. SMOKING

Nicotine will temporarily increase your blood pressure, so avoid smoking for at least 30 minutes before having your blood pressure taken.

## 8. ALCOHOL / CAFFEINE

Alcohol and caffeine (coffee, tea, sodas, etc.) will cause your blood pressure to spike, so like smoking, avoid these substances for at least 30 minutes before getting a reading.

## 9. ROOM TEMPERATURE

When you are cold, your blood pressure tends to rise because your blood vessels constrict. So, if you're in a room or doctor's office that feels chilly, expect your readings to be higher than usual. Ideally, blood pressures should be taken in a warm environment.

## 10. DEHYDRATION

Dehydration decreases blood volume and can cause a sudden drop in blood pressure

resulting in less oxygen reaching your tissues. Even mild dehydration can cause weakness, dizziness and fatigue. During exercise, you may be consuming 10 to 15 times more oxygen than at rest, so if you're dehydrated, you can suffer from serious dehydration which can have severe medical consequences.

NOTE: Studies have shown that clothing does not have a significant impact on your blood pressure measurement if the clothing is less than 2 mm thick. Wearing a light shirt or T-shirt during your blood pressure reading is acceptable, but avoid restrictive clothing and tight rolled-up sleeves which can create a tourniquet effect above the blood pressure cuff.

If you are on hypertensive medication(s), your blood pressure readings may vary depending on what time of the day you take your drugs. Whenever you record your blood pressure, also note what time you took your meds. This relationship may be helpful to your prescribing physician when assessing the effect of the anti-hypertensive drugs.